N. A. C. A. BULLETIN

Vol. XXIII, No. 1 September 1, 1941

IN TWO SECTIONS

Section I

IN THIS ISSUE

Uniform Pricing,
by Raymond E. Jacke..... 3

The Use of Predetermined Costs in Pricing in the Shoe Industry,
by Harold S. Wonson..... 29

This Bulletin is published semi-monthly by the National Association of Cost Accountants, 385 Madison Avenue, New York. Subscription price, $10.00 per year. Entered at the Post Office, New York, N. Y., as second-class matter August 28, 1925, under the Act of March 3, 1879.

EDITORIAL DEPARTMENT NOTE

The development of pricing policies is a most important function in any business. Where products are diversified and produced on a made-to-order basis the application of predetermined policies often requires the development of techniques which the cost accountant is particularly well qualified to prepare. The Robinson-Patman Act has resulted in many firms reviewing and revising their costing and pricing policies and has brought about a uniformity or consistency in pricing that in many cases did not exist before. The two articles in this issue of the *Bulletin* describe pricing methods in two widely different industries. The first outlines methods used to secure uniformity in the application of pricing policies in a company with a great variety of products manufactured on a made-to-order basis. The second article describes the use of predetermined costs as the foundation for pricing in the shoe manufacturing industry.

The author of our first article, Raymond E. Jacke, is a native of Louisville, Ky., and received his training and early business experience there. Since joining the United States Foil Co. as Cost Accountant in 1923, he has spent 18 years with this company and its successor, the Reynolds Metals Co. At the present time he is in charge of Sales Cost and Pricing for the Reynolds Metals Co. in Richmond. Mr. Jacke joined the Association in 1928, and for six years thereafter served as Secretary of the Louisville Chapter. Subsequently, he became affiliated with the Newark and Washington Chapters and is a charter member of the Richmond Chapter.

Our second article is by Harold S. Wonson, Controller of the Commonwealth Shoe & Leather Co., whose background of experience in cost work in the shoe and leather industry has extended over a considerable period of time, beginning in 1910, three years after his graduation from Massachusetts Institute of Technology, when he became connected with the Cost Department of the W. H. McElwain Co. He later was made Assistant General Superintendent. Returning to this company after World War I, during which he served in Washington in the Quartermaster Corps, attaining the rank of Lieutenant Colonel, he spent the ensuing eleven years as Manager of the Sole Leather Division. After the company merged with the International Shoe Co. he remained for a time, leaving in 1930 to assume the position which he now holds as Controller of the Commonwealth Shoe & Leather Company. In addition, Mr. Wonson has had academic experience, having spent three years, 1907 to 1910, as a member of the teaching staff of the Department of Naval Architecture at M. I. T. He is also active in the New England Shoe and Leather Association, of which he was President from 1932 to 1936, and of which he has been a Director for many years.

Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the views expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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UNIFORM PRICING

By Raymond E. Jacke, In Charge, Sales Cost and Pricing, Reynolds Metals Co., Richmond, Va.

Introduction

THE title of this paper may be misleading in that one may be led to expect an exhaustive treatment of this highly controversial subject. Nothing so ambitious is contemplated since this writer feels neither qualified nor convinced that this issue has but one answer. Some will argue the single-price principle, while others have boasted before the Robinson-Patman Act and still believe in "never giving a sucker an even break." Both may be right if, aside from any ethical measure, the proof is the success of either. Many are still convinced that business is merely clever selling versus clever buying and that there can be no clever selling with fixed prices. Besides, isn't any article worth to any person what that person is willing to pay?

No, thank you! This aspect of the subject may well be left to hard-headed business men, theorists and nimble-witted debaters to tackle. This paper will deal strictly with if's: If you have the proper business, if the conditions are right, if you favor uniform pricing, then here is presented one practical means of at least partial attainment.

What Is Price?

For want of a better definition, consider price the value of an article determined by demand and the cost to produce. There are probably better definitions, but this one serves a particular purpose with respect to the cost to produce. If an article cannot be produced to sell at a profit, then for what reason would it be produced? Perhaps it may be produced if necessary as a complement to another highly profitable item, but standing alone, such an article would be an economic cancer requiring an operation. A solution might even be found in a less costly substitute, or better production facilities, but certainly a disproportionate condition of this kind exists only temporarily.

Comparable to the strange pitcher plant, price is a very sensitive measure and is influenced by many factors. The stock exchange

price fluctuations may be an exaggerated example and, yet, behind every movement there is a reason, real or fancied, created or natural. Fortunately for business enterprise, prices on merchandise have much greater stability due to intrinsic worth and utility, but even this does not insure against losses through forced price changes. There is little doubt that supply and demand are the chief contributors to this condition. However, the operation of this economic law is rather generally understood and in a limited degree controlled by creating desire through advertising and by affording means with adequate credit facilities to stimulate demand. Often price can be maintained at a disproportionately high level through effective advertising on the one hand, or by controlling the supply with some form of monopoly on the other. Very little permanency, however, may be expected from an unbalanced condition of this kind due to the effect of inevitable competition.

Regardless of circumstances, the element of competition is a powerful omnipresent threat. It is at once a stimulus and check for all phases of business activity. Consider for a moment the effect competition may bring to bear, counteracting almost any unbalanced pricing policy followed. If an article is priced too high on the strength of a widely advertised brand name, there is grave danger that this policy will become a protective umbrella for the growth of small competitors to a size capable of inflicting irreparable damage on the leader. Suppose there is a protected monopoly for which reason the same abnormal pricing policy is exercised. This instance requires caution against bootleg infringements, substitute products and, depending upon the product, a limited volume.

Relation of Price to Its Low-water-mark Cost

Just as water seeks its lowest level, so does price eventually settle to a level of cost plus a reasonable return. Furthermore, this statement might even be projected to apply only to the low-cost producer. Let it be assumed, however, that in order to survive, an enterprise must be progressive enough to attempt to keep at least even with competitors on production costs. Then, unless there is over-production or over-ambition, resulting in wasteful dumping, prices will be close enough so that any slight variation could easily be justified by service or quality differences in order to maintain sales.

Any other approach to this problem of pricing appears unsound for a long range view. Of course, there are chiselers and fly-by-night business entrepreneurs, but we are dealing with high-minded legitimate business enterprises with conscience. If not, we are then putting business on the same level with cheap gamblers and let the dog-eat-dog principle prevail.

Need for Uniform Pricing

Irrespective of the merits of the Robinson-Patman Act, it cannot be denied that there is sound logic, and good business too, in the principle of single price for like kind and grade of product sold within a given industry. Invariably a policy of fixed prices without discrimination commands confidence and establishes good-will. Sharp practices in pricing lead only to suspicion by those favored and unfavored alike, and regardless of intentions or quality of merchandise or service, the valuable assets of good-will is sure to be impaired. Good-will is the character and integrity of business, and as such, it must be above suspicion. Besides, considering the trend of present legislation, the old Latin phrase should be changed to "Let the seller beware"—if the wily purchasing agents don't beat you at your own cagey game, the government will.

Aside from all this, good management has a definite need for a uniform pricing policy. This applies particularly to a business manufacturing diverse products with both standard and made-to-order specifications. Under the hit and miss practice, who is qualified to set prices on the numerous products and variations required? Shall it be the sales manager, the cost accountant, or perhaps the boss? There are obvious objections against any individual in an organization being vested with this responsibility and authority. What person is so completely informed that he knows at once all about production conditions, costs, market situations, competitive influences and the like, enabling him to make many separate unrelated quotations in a single day? Few would be presumptious enough to claim this qualification. Besides, it is the responsibility of collective management to formulate and direct policy, principles and procedure which may be applied by any ordinary individual. With the adoption of a uniform and consistent pricing plan, the control passes into the hands of manage-

ment where it belongs, and the only time-consuming consideration required is in dealing with important exceptions.

Case Example Prelude

The remainder of this paper will be given to the description of a case example of a uniform pricing method developed and successfully practiced by the Reynolds Metals Company. Let it be remembered that given figures have no significance or meaning beyond illustration of method or principle involved.

As a preliminary step, it may be very helpful to furnish at this point a little local color in the form of company background, products, etc. It is sufficient to the purpose to mention that the Reynolds Metals Company is not an old and settled concern in years, since its remarkable growth, mainly attributable to the qualities of its President and founder, Mr. R. S. Reynolds, Sr., has been within the past twenty years. Almost steady expansion occurred during this period, making it necessary for the whole organization to be able to absorb change quickly.

This Company has grown very diversified in its products, but the light gauge rolled metal, called foil, remains the principal product in its many different forms. Because of its importance, only the foil division will be considered in the case example presented. Still further contraction is necessary and therefore this paper will be confined to rolled aluminum foil products which constitute a substantial volume of this Company's sales. Briefly stated, aluminum ingots are melted and cast into slabs which are passed through a series of rolling operations to required gauges from .005″ to .00025″. This rolled aluminum may be further processed, alone or laminated with various grades and weights of paper, by embossing, coloring, printing of various types, slitting or cutting to size, bag forming, carton making, and various other means of producing finished products. Thousands of possible variations are easily apparent in this classification alone, and practically all production is to made-to-order specification.

Factors in the Uniform Price Build-up

As the foundation of any structure is of primary importance, so it is essential that manufacturing costs should be sound in order to form the proper basis for uniform pricing. This setup presup-

poses that accurate standard costs are available for computing unit costs on all products manufactured.

Besides the manufacturing cost, but measured by it, are the factors of selling and general administrative expenses. This is usually a much neglected element of cost that gets no more consideration than a tail on a dog and looks the part when combined with manufacturing cost in arriving at so-called commercial cost.

To commercial cost is added profit margin, completing the price build-up except for any extras such as cash discounts, prepaid freight, special commissions, chargeable patterns, dies or other materials or items considered deductions from gross sales rather than part of net.

Basic Manufacturing Costs

It is to be taken for granted that manufacturing costs can be computed in some acceptable manner and hence any elaboration on this broad subject is considered unnecessary within the scope of a paper on pricing. However, some attention at this time should be directed toward selection of proper costing units which will aid materially in simplifying the pricing problem. This is particularly essential in a business manufacturing products of many possible variations. Conviction on this point is easily gained when one is confronted with the task of compiling a usable price list covering thousands of items. Furthermore, men who actually use the prepared price lists prefer simple and concise groups of figures easy to comprehend. Too many figures confuse the average untrained person, and in addition whenever price changes occur, there is much time and expense involved.

Starting with the manufacturing cost, one will find it important to properly analyze products in the simplest terms and establish common costing units covering as many variations as possible. For instance, the case example of aluminum foil products clearly shows the necessity of seeking a common costing unit which will give desired uniformity, covering the greatest range of product variations with a minimum number of figures. Rolled aluminum metal has a combination of two basic costing units—weight and area. Weight unit applies to such cost elements as the metal itself, casting, heavy slab rolling and finished product packing. Area unit applies to the intermediate and series of light gauge mill rolling operations. Fin-

ally, metal spooling is according to area and so is reel rewinding in preparation for flat sheet cutting, the cost of which is on the weight basis. All surface decorating as well as laminating operations are costed on area unit.

Many thousand cost figures would be required in an attempt to cover every possible specification manufactured. This would prove very cumbersome to apply as well as difficult and costly to compute and revise as changes occur. To overcome this problem, the use of common costing factors was found necessary. Plain aluminum foil, for example, can be costed in certain representative gauges—spooled and in a given mill width—as follows:

Gauges—Inch Thickness.	.005"	.002"	.001"	.0006"	.0004"	.0003"	.00025"
Yields—Sq. In. Per Lb..	2050	5100	10250	17000	25600	34000	41000
Cost Per Pound	.30	.315	.34	.3575	.38	.40	.4275
Equiv. Per M Sq. In....	.1463	.0618	.0332	.0210	.0148	.0118	.0104

With the cost accurately computed against each representative gauge, it was found possible to establish from these comparisons certain common factors. Taking each gauge against the next lighter gauge, we determined factor similarity by dividing yield difference into cost per pound difference which gives the variable area factor. This figure, when multiplied by either yield and the product subtracted from its respective cost per pound, will give the factor representing a fixed cost per pound, regardless of yield, to be applied together with the determined area factor.

Example:	.005" gauge	.002"	Difference
Respective yields	2050	5100	3050
Cost per pound.....	.30	.315	.015

By dividing .015 per pound cost difference by 3,050 square inches area difference, we obtain the area factor of approximately .005 per thousand square inches. This factor when multiplied by either yield (e. g., 5,100 which gives .025 per pound) and the product subtracted from the base cost, will give the weight factor, which in this case is .29 per pound. These two factors together, .29 per pound plus .005 per M square inches, then becomes the costing basis for the two gauges considered as well as any intermediate gauges. The same computation repeated to cover all representative gauges costed shows sufficient similarity between gauges to permit grouping as follows:

.0005″ to .0001″ at .29 per lb. plus .005 per M square inches
.001″ to .0003″ at .315 per lb. plus .0025 per M square inches
.0003″ to .00025″ at .265 per lb. plus .004 per M square inches

Such steps as this may be properly termed the process of contraction or drawing together for the purpose of economy of effort, facility in application and uniformity of results.

Another example of cost contraction which will appear in a later pricing list exhibit on printing, covers the elimination of separate costs on various sizes. By the same method just described, an analysis of cost disclosed a definite relationship between costs of various size pieces and a fixed factor combination of area plus piece cost common to all sizes.

EXAMPLE:

Piece area (sq. in.)..	10	25	50	100
Cost per M pieces..	1.00	2.19	4.21	8.20

Again the area difference divided into cost difference between groups shows a common area cost of .08 per M square inches and when this is applied to any area cost, it leaves a remainder of .20 which becomes the fixed factor per M pieces. By this means the cost of .08 per M square inches plus .20 per M pieces may be applied to any size of a particular specification.

Method of Determining Selling and General Expenses for Pricing Application

Operating on a made-to-order basis, this case company has a substantial order cost element which should be taken into consideration for establishing quantity price differences. On many products, particularly those continuous process items where no direct setup cost is incurred, the order charge becomes the only means permitting price concessions for quantities. Because of this condition it is necessary to take full advantage of the order cost privilege granted in the Robinson-Patman Act.

Most of the order cost will be found in the selling and general office expenses, but in addition the plant office may even contribute its share. In Exhibit 1 an arbitrary analysis of these expenses illustrates a general method of obtaining a very useful figure in pricing and at the same time establishes a basis for the application of full selling and general expenses.

EXHIBIT 1

DISTRIBUTION OF SELLING AND GENERAL EXPENSES

	Est. Per Cent Applying to Orders Taken	*Total Amount*	*Distribution Basis Units Sold*	*Distribution Basis Orders Taken*
SELLING EXPENSES				
Payrolls				
General Staff	20%	$ 27,000	$ 21,600	$ 5,400
Sales Cost Dept.	40%	8,000	4,800	3,200
Sales Mgr. and Staff	30%	65,000	45,500	19,500
Branch Mgrs. and Staffs	30%	70,000	49,000	21,000
Sales Office	50%	15,000	7,500	7,500
Salesmen	60%	100,000	40,000	60,000
Sales Promotion	20%	40,000	32,000	8,000
Commissions	....	30,000	30,000	.....
Total Payroll	35%	$ 355,000	$230,400	$124,600
Variable Expenses	35%	160,000	104,000	56,000
Fixed Expenses	....	5,000	5,000	.....
Redistributive Expenses	24%	100,000	76,000	24,000
TOTAL SELLING EXPENSES	33%	$ 620,000	$415,400	$204,600
GENERAL EXPENSES				
Payrolls and General				
Executive and Staffs	10%	$ 200,000	$180,000	$ 20,000
General Accounting	20%	50,000	40,000	10,000
Credit Dept.	80%	30,000	6,000	24,000
Legal Dept.	....	25,000	25,000	.....
General Purchasing	40%	35,000	21,000	14,000
Total	20%	$ 340,000	$272,000	$ 68,000
Other Deductions (net)	....	140,000	140,000	.....
TOTAL GENERAL EXPENSES	14%	$ 480,000	$412,000	$ 68,000
TOTAL SELLING AND GENERAL	25%	$1,100,000	$827,400	$272,600
Adjustment for Plant Redistributive Expenses Applicable to "Orders Taken" Basis	Add			$ 70,000
	Deduct		$ 70,000	
	....	$1,100,000	$757,400	$342,600

EXHIBIT 1—Continued

PLANT REDISTRIBUTIVE EXPENSES

	Per Cent to Orders	*Totals*	*Units Sold*	*Orders Taken*
Production Order Dept.	80%	$ 20,000	$ 4,000	$16,000
Accounting—Cost—Payroll ...	20%	75,000	60,000	15,000
Production Dept.	60%	50,000	20,000	30,000
Traffic Dept.	60%	15,000	6,000	9,000
TOTALS	....	$160,000	$90,000	$70,000

(Included in Manufacturing Overhead)

APPLICATION OF SELLING AND GENERAL EXPENSES FOR PURPOSES OF PRODUCT COSTING

Net Sales		$12,450,000		
Mfg. Cost of Sales				
Materials	$6,250,000		70% of Total Cost	
Labor and Overhead.....	3,220,000		30% of Total Cost	
Total		9,470,000		
Number Orders Issued.....	27,400			
Selling Expenses		620,000	$415,400	$204,600
Application Basis (% of Mfg.)				
(Cost—			4.39%	
(Cost per Order)				7.46
General Expenses Including				
Plant Redistributive Adjustment.....		480,000	342,000	138,000
Application Basis (% of Mfg. Cost)			3.61%	
(Cost per Order)				5.04
Totals		$ 1,100,000	$757,400	$342,600
(% of Mfg. Cost)			8%	
(Cost per Order)				$12.50
NET SALES $12,450,000				
Deduct: Commercial Cost. 10,570,000			(Mfg. Cost plus S. and G. Expenses)	
NET PROFIT		$ 1,800,000		
(% of Net Sales)		15.1%		
(% of Commercial Cost)		17.8%		

Preparation of this schedule entails close study of departmental effort and expenses. Each separate functional division ought to be considered in the light of what might be the condition if only a fraction of orders issued produced the same sales volume. If, for

example, it is estimated that one-half the number of orders could be handled by a department at three-quarters of present expenses, assuming same volume, then it would appear reasonable to consider 50 per cent of total expenses applicable to orders taken. In this manner a complete and acceptable breakdown of selling and general office expenses can be obtained. Likewise, any part of plant office expenses affected by number of orders handled may be treated in the same way. However, if plant office expense is redistributed into manufacturing overhead and applies unidentified on a production unit basis, as shown in Exhibit 1, then only the amount applicable to orders taken may be adjusted into the general expense order cost and reversed out of unit cost bracket in order to compensate for the original application. The net result obtained in Exhibit 1 shows that the application of 8 per cent on total manufacturing cost plus $12.50 per order would have absorbed selling and general expenses during the given period.

Principle of Applying Selling, General Office Expenses and Profit Margin to Products

Due to the nature and variety of products manufactured, it would be meaningless to attempt to establish article classifications for the purpose of properly distributing selling and general office expenses. Several separate and distinct products have separate sales organizations, but for the most part the full line of foil items are handled by one general sales force.

Even under the circumstances mentioned, the products manufactured will not permit the application of a single percentage figure for selling and general expenses against all items alike. Obviously, in every product two primary elements are sold, namely, materials and processing, each of which require separate treatment because of their distinctly different natures. For the same reason it is considered essential in good cost accounting practice to segregate various operations for the purpose of proper distribution and application of overhead. On the one hand, material is either raw or semi-processed to some degree. Most purchased materials fall in the second category and consequently already contain a certain amount of cost and profit build-up. Reasonably enough, a merchandise broker or distributor of these materials could expect only

a very small margin depending upon the amount of handling and investment risk involved. Similarly, the manufacturer also buys and sells materials, but in addition changes their form, and thereby increases to some extent handling and investment risk on the material itself.

Besides this, however, in order to change the form of original materials into particular products, the manufacturer adds labor and expense of operating plant facilities. This necessitates a great deal more investment risk and organization, which commands a greater return. On this cost there is no prior profit on profit build-up and therefore the basic value added is entitled to the greatest margin the market will bear.

Because of the wide variation in foil products, the material cost of which is between 20 per cent and 95 per cent of total cost, it was found necessary to establish what might be termed an adjustment ratio for the application of selling and general office expenses as well as profit margin. After careful study of all factors involved, it was concluded that the profit return ratio should be 3 to 1 per cent, processing to material, and also that this same ratio should apply as well to selling and general office expense against products. It was reasonably determined that since our average product contained 70 per cent material (See Exhibit 1) we could expect to sell and handle proportionately the same sales volume of material alone with 62.5 per cent of the selling and general office expense. Conversely, if sales volume theoretically consisted of 100 per cent processing, then these expenses could be expected to increase 87.5 per cent. Therefore, the relationship of 187.5 per cent to 62.5 per cent, or 3 to 1 was established.

This ratio, when applied to profit or selling and general expense basis, gives a very convenient means of determining a variable mark-up which will be uniform for all products of like kind and grade. For example, Exhibit 1 shows the average product of 70 per cent material carries 8 per cent selling and general expense to total manufacturing cost on a given sales volume. Also, the actual net profit on the same sales is 15.1 per cent which is equivalent to 17.8 per cent of commercial cost. We have already determined that a 3 to 1 ratio, when applied to 70 per cent average product, produces a ratio factor of 187.5 per cent to 62.5 per cent. This means that any figure selected for the average product may be ad-

justed by these percentages in order to establish base figures which may be used against products of any classification.

If it is anticipated that the actual figures in Exhibit 1 should apply in future period, then selling and general expense percentage times the ratio factor shows base to be 15 per cent to 5 per cent applicable to processing and material cost respectively. Likewise, net profit margin of 17.8 per cent on commercial cost becomes 33.3 per cent to 11.1 per cent respectively by the same calculation.

For any product, then, on which is known percentage of material cost to total cost, the above base percentages may be applied in a properly related proportion. Take a product, for example, which contains 40 per cent material. The profit percentage to commercial cost would be 40 per cent of 11.1 per cent plus 60 per cent of 33.3 per cent, giving the combined figure of 24.4 per cent. Converted to the selling price basis by dividing 124.4 per cent into 24.4 per cent, profit mark-up on commercial cost, this figure shows 19.61 per cent net profit. In fact, the same calculation to the base profit margin figures shows the full range of net profit against sales to be 10 per cent on materials and 25 per cent on processing.

Simplified Method of Mark-up Applications

At this point, it may again bear mentioning that figures used in this paper have no significance except for relative illustration. In Exhibit 2, entitled "Mark-Up Schedule," will be found the fictitious base figures just computed from Exhibit 1, worked into a convenient form which greatly facilitates application.

Columns 3 and 4, covering selling and general expense and profit margin respectively, combine in sequence with 100 per cent to give result in column 7. This figure is the base mark-up on manufacturing cost and should show against selling price the gross margin corresponding to figures in column 6 and a net profit on sales according to column 2. Figures contained in columns 6 and 2 are merely equivalents of columns 7 and 3, respectively, converted to selling price basis by dividing each figure by itself plus 100.

Along with this percentage mark-up, being no small part of it except that it is applied on a different basis, there is the order cost in column 5 which, when combined with profit margins, gives group figures shown in column 8. This is the standard order charge which supplies the legitimate means of showing price dif-

EXHIBIT 2

MARK-UP SCHEDULE

	Profit Margin		Selling and General Expense			Base Mark-Up On	
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Per Cent Nat'l Cost	*Std. S. P.*	*Comm'l Cost*	*Mfg. Cost*	*Per Order*	*Equiv. M. U. in Sellg. Price*	*Mfg. Cost*	*Per Order*
	10%/25%	11.1%/33.3%	5%/15%	$12.50			
-0-	25%	33.3%	15.		34.4%	53.3%	
5%	24.36	32.2	14.5		33.9	51.4	16.75
10	23.72	31.1	14.		33.1	49.5	
15	23.08	30.	13.5		32.3	47.6	
20	22.42	28.9	13.		31.3	45.7	
25	21.75	27.8	12.5		30.4	43.8	16.00
30	21.07	26.7	12.		29.6	41.9	
35	20.32	25.5	11.5		28.5	39.9	
40	19.61	24.4	11.		27.6	38.1	
45	18.90	23.3	10.5		26.6	36.2	15.50
50	18.17	22.2	10.		25.6	34.4	
55	17.62	21.1	9.5		24.6	32.6	
60	16.67	20.	9.		23.5	30.8	
65	15.90	18.9	8.5		22.5	29.	15.00
70	15.11	17.8	8.		21.4	27.2	
75	14.31	16.7	7.5		20.3	25.5	
80	13.49	15.6	7.		19.1	23.7	
85	12.59	14.4	6.5		17.9	21.8	
90	11.74	13.3	6.		16.7	20.	14.50
95	10.87	12.2	5.5		15.5	18.4	
100	10.	11.1	5.		14.3	16.7	

Notice that column 1 contains the product classification by per centage of material cost to total cost in groups graduated by 5 per cent difference. Any intermediate classed products take the next lowest percentage group for mark-up basis.

ferences for quantity or products of standard materials in continuous production where no special setup is required. On other orders requiring special setup, the additional charge for setup is combined with the standard order charge for determining quantity price.

One flexible feature of this standard mark-up plan is attributable to the fact that prices may be adjusted by applying proper mark-up on cost differences and treating as a price change with the same result that would be obtained by working change into the total cost and refiguring classification and applying new mark-up. Much time is saved through this simple expedient which carries with it the absolute guarantee of total uniformity.

Comprehensive Master Price Lists

All that has been brought out thus far leads up to preparation of price lists. Form and arrangement is largely a matter of individual taste except for the fact that a price list must be made usable. To be usable a price list should be simple, concise, complete and orderly in content, and of convenient size and form. In some instances, it is not an easy accomplishment to prepare a usable list, especially where the nature and variety of similar products require condensing and the establishment of many differentials to cover the range.

An example of a list containing thousands of possible prices and variations is presented in Exhibit 3. Probably not more than 500 pricing figures are contained in this illustrative list on "Rolled Aluminum," but since many of these figures are differentials, each of which may be applied to many other figures, the number of prices from combinations multiply considerably.

This "Rolled Aluminum" price list was compiled by giving first consideration to the base form of all foil products, viz., plain rolled metal. Selection of a number of commonly specified gauges which form a good sequence was the first step. Costs were computed and prices determined on this base product and these prices then became the basis for all other prices set forth in the list. By this means all products have a uniform metal price to which is added the charge for further processing.

Some of these extra charges vary with gauge thickness, as the classification of colored metal gives evidence. All price differentials to the plain rolled aluminum base are first computed and applied on the logical area unit before converting to the pound selling unit. Because of the extreme variations in metal weight and values to paper backing, the prices per pound often show a complete lack of uniformity. Converted to an area basis, however, these same prices will appear reasonably different with accountable variations. Consequently, the price build-up is by area, which in turn may be converted to any selling unit desired. In the considered list, interleaved and mounted specifications were priced by adding fixed differentials for each group to area price equivalents of unmounted rolled aluminum items and this sum in turn multiplied by the number of square inches per pound yield to obtain price per pound.

REYNOLDS METAL

ROLLED ALUMINUM

PLAIN and DECORATED

WITHOUT AND WITH PAPER BACKING

Interleaved - Solid Wax - Glue Line Mounted

PRICE LIST

APRIL 8,

GENERAL TERMS OF SALE:

(Selling Unit is Per Pound—Metal Gauge and Yield subject to plus or minus 10% tolerance.)

Credit: Net amount, 30 days, subject to acceptable arrangements with our Credit Department.

Shipping: Freight prepaid on shipments of 125 lbs. or more, not to exceed $1.50 cwt.

Metal Cores: Weight of Aluminum Cores shall be deducted from net weight and charged as a separate item at the following values:

1⅝" I. D. Cores..... .41 per lb.
2¼" I. D. Cores..... .42 per lb.
3" I. D. Cores..... .44 per lb.

Cores in good condition are returnable for credit at same value in minimum quantities of 25 lbs. F. O. B. plant of origin. Paper cores are not included in this provision.

Embossing Roll: Signature designs or special patterns require extra charge of $200.00 to $300.00 depending upon design, for rolls and equipment. No roll charge made against original orders for minimum 10,000 lbs. unmounted, or 15,000 lbs. mounted material.

Packing Materials: Flanges and Dowels used in packed spooled items remain the property of Reynolds Metals Co., and are to be returned by customer "freight collect" to plant of origin.

REYNOLDS METALS COMPANY

Federal Reserve Bank Building

Richmond, Virginia

OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES

EXHIBIT 3

EXHIBIT 3 (CONTD.)

REGULAR COMMERCIALLY PURE ALUMINUM WITH STANDARD MILL FINISH

(METAL GAUGES AND YEILDS SUBJECT TO VARIATION TOLERANCE OF PLUS OR MINUS 10%)

Base Prices: 10,000 Lbs. Coiled Aluminum 1⅛" Width and Over. (22⅛"—26⅛" Standard Mill Widths supplied without Trim Penalty.)

METAL GAUGE	APPROXIMATE YIELD (Square Inches per Pound)		SMOOTH				EMBOSSED				ADJUSTMENTS—Add for		
			Silver		Colored		Silver		Colored		Rectangular Cut		Special
	Silver	Colored	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Per Lb.
ROLLED ALUMINUM—UNMOUNTED													
.0003	34,000		.535	.0137									
.00031	33,000		.53	.0161									
.00035	31,000		.52	.0168									
.00035	29,200		.51	.0175			.59	.0202			.04	.0014	
.0004	25,600	24,700	.50	.0195	.82	.0131	.575	.0224	.895	.0362	.04	.0016	
.00045	22,700	21,950	.49	.0216	.78	.0355	.56	.0247	.85	.0386	.04	.0018	
.0005	20,500	19,900	.49	.0239	.77	.0387	.555	.0271	.835	.0419	.04	.0020	
.00065	15,700	15,350	.48	.0305	.72	.0469	.535	.034	.775	.0505	.04	.0025	
.0007	14,600	14,250	.48	.0329	.71	.0498	.53	.0363	.76	.0533	.04	.0027	
.0008	12,800	12,550	.47	.0367	.69	.0549	.52	.0406	.74	.0589	.035	.0028	
.0009	11,350	11,150	.46	.0405	.66	.0592	.505	.0445	.705	.0632	.035	.0030	
.001	10,250	10,050	.45	.0439	.64	.0637	.495	.0483	.685	.0682	.03	.0030	
.0015	6,900	6,700	.44	.0647	.615	.0918	.48	.0705	.655	.0978	.025	.0036	
.002	5,100	5,040	.43	.0863	.57	.1131					.02	.0039	
.0025	4,100	4,060	.42	.1025	.55	.1355					.015	.0039	
.003	3,400	3,370	.41	.1206	.535	.1588					.015	.0044	
.0035	2,930	2,910	.40	.1365	.51	.1752					.015	.0051	
.004	2,550	2,530	.395	.1549	.50	.1976					.018	.0059	
.005	2,050	2,035	.39	.1902	.49	.2407					.015	.0073	
INTERLEAVED 11-LB. TISSUE (Add .0085 per M Sq. Ins. Differential to Metal)													
.0003	17,900		.435	.0242							.01		
.00035	16,650		.43	.0260			.475	.0287			.01		
.0004	15,250	14,900	.43	.0280	.62	.0416	.475	.0309	.665	.0447	.01		
.00045	14,170	13,870	.43	.0301	.61	.0440	.47	.0332	.655	.0471	.01		
.0005	13,300	13,000	.43	.0324	.615	.0472	.475	.0356	.655	.0506	.01		
.00065	11,100	10,920	.43	.0390	.595	.0554	.475	.0425	.645	.0590	.01		
.0008	9,560	9,420	.43	.0452	.595	.0634	.47	.0491	.635	.0674	.01		
.001	8,050	7,930	.425	.0524	.575	.0722	.46	.0568	.61	.0767	.01		
.0015	5,760	5,680	.42	.0732	.57	.1003	.455	.0790	.605	.1063	.01		
.003	3,120	3,100	.405	.1291	.52	.1673					.01		
MOUNTED 16-LB. WAXED PAPER													16-LB. WAXED PAPER
.00035	13,750		.39	.0286			.40	.0291			.01		Deduct .03 (12,130)
.0004	12,900	12,650	.39	.0302	.555	.0438	.40	.0310	.565	.0447	.01		Deduct .03 (11,470)
.00045	12,100	11,900	.38	.0314	.54	.0453	.39	.0322	.55	.0462	.01		Deduct .03 (10,830)
.0005	11,450	11,250	.38	.0332	.54	.0480	.39	.0341	.55	.0488	.01		Deduct .025 (10,120)
.00065	9,770	9,650	.39	.0399	.545	.0561	.40	.0409	.555	.0575	.01		Deduct .025 (8,930)
.0008	8,570	8,450	.40	.0467	.55	.0649	.41	.0478	.56	.0663	.01		Deduct .02 (7,910)
.001	7,340	7,250	.41	.0558	.545	.0756	.42	.0572	.555	.0768	.01		Deduct .02 (6,860)
.0015	5,380	5,320	.41	.0762	.55	.1033	.42	.0781	.56	.1052	.01		Deduct .015 (5,120)

EXHIBIT 3 (CONTD.)

(Continuation of Base Prices)

EXHIBIT 3 (CONTD.)

(Continuation of Base Prices)

METAL GAUGE	APPROXIMATE YIELD (Square Inches per Pound)		SMOOTH				EMBOSSED				ADJUSTMENTS—Add for		
			Silver		Colored		Silver		Colored		Rectangular Cut		Special
	Silver	Colored	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Lb.	Equiv. MSq.Ins.	Per Lb.
MOUNTED 30-LB. WAXED PAPER													**25-LB. WAXED PAPER**
.00035	9,380		.31	.0331			.32	.0341			.01		Add .03 (10,600)
.0004	8,860	8,860	.31	.0345	.425	.0481	.32	.0356	.435	.0491	.01		Add .03 (10,700)
.00045	8,390	8,480	.30	.0349	.415	.0488	.31	.0361	.425	.0501	.01		Add .03 (9,580)
.0005	8,150	8,150	.30	.0364	.42	.0512	.31	.0375	.43	.0528	.01		Add .03 (9,180)
.00065	7,350	7,275	.31	.0422	.425	.0586	.32	.0435	.435	.0598	.01		Add .03 (8,070)
.0008	6,650	6,580	.33	.0496	.445	.0678	.34	.0511	.455	.0691	.01		Add .03 (7,230)
.001	5,885	5,820	.34	.0577	.45	.0775	.35	.0595	.46	.0790	.01		Add .03 (6,330)
.0015	4,565	4,520	.34	.0745	.46	.1016	.35	.0766	.47	.1040	.01		Add .03 (4,830)
Note: For 30 lb. Waxed Parchment (25 lb. base) add $.01 per M square inches; for 30 lb. Waxed Greaseproof (25 lb. base) add $.005 per M square inches to prices on item in above group figuring fractional difference to nearest higher half cent per lb.													
MOUNTED 25-LB. WAXED GLASSINE													
.00035	11,150		.41	.0368			.42	.0377			.01		
.0004	10,580	10,420	.41	.0387	.545	.0523	.42	.0397	.555	.0532	.01		
.00045	10,050	9,900	.40	.0398	.53	.0537	.41	.0408	.54	.0546	.01		
.0005	9,600	9,460	.40	.0417	.535	.0565	.41	.0427	.545	.0576	.01		
MOUNTED 25-LB. (25 lb. Tissue, waxed 4 lbs. each side)													
.00035	11,150		.38	.0341			.39	.0350			.01		
.0004	10,580	10,420	.39	.0368	.525	.0504	.40	.0377	.535	.0513	.01		
.00045	10,050	9,900	.39	.0388	.52	.0527	.40	.0397	.53	.0536	.01		
.0007	8,040	7,940	.40	.0497	.53	.0666	.41	.0510	.54	.0679	.01		
MOUNTED 38-LB. (20 lb. Paper, waxed, 9 lbs. each side)													**43 LB. (25-Lb. Paper Waxed 9 lbs. each side)**
.00035	7,940		.31	.0390			.32	.0403			.01		Deduct .02 (7,250)
.0004	7,650	7,560	.32	.0418	.42	.0554	.33	.0432	.43	.0569	.01		Deduct .02 (7,000)
.00045	7,170	7,290	.34	.0461	.44	.0600	.35	.0475	.45	.0617	.01		Deduct .02 (6,770)
.0007	6,230	6,170	.35	.0562	.45	.0731	.36	.0578	.46	.0745	.01		Deduct .02 (5,790)
MOUNTED (GLUE LINE) 25-LB. GREASEPROOF													**24 LB. GLASSINE**
.00035	10,450		.32	.0306			.33	.0316			.01		Add .02 (10,730)
.00045	9,470	9,340	.32	.0338	.445	.0473	.33	.0348	.455	.0487	.01		Add .02 (9,690)
.00065	7,990	7,900	.33	.0413	.455	.0578	.34	.0426	.465	.0588	.01		Add .02 (8,140)
.0008	7,160	7,090	.33	.0461	.455	.0643	.34	.0475	.465	.0655	.01		Add .02 (7,290)
MOUNTED (GLUE LINE) 30-LB. GREASEPROOF													
.00035	9,280		.295	.0318			.305	.0329			.01		
.00045	8,500	8,390	.295	.0367	.41	.0486	.305	.0359	.42	.0500	.01		
.00065	7,290	7,220	.305	.0418	.42	.0582	.315	.0432	.43	.0595	.01		
.0008	6,590	6,530	.305	.0463	.42	.0649	.315	.0477	.43	.0658	.01		

DIFFERENTIALS TO BASE PRICES

Quantity: Add per pound:	Plain or Embossed Unmounted	Embossed Mounted	Colored
10,000 lbs.	Base	Base	Base
5,000 lbs., add	.005	.005	.005
2,000 lbs., add	.01	.01	.015
1,000 lbs., add	.02	.02	.03
500 lbs., add	.03	.04	.05
250 lbs., add	.05	.07	.08
125 lbs., add	.10	.12	.15
50 lbs., add	.16	.20	.25
25 lbs., add	.24	———	———

Item Groupings for Quantity Price: Minimum 125 lbs. per item. Items of same color or embossing design (including Plain Silver as a color) in different widths, or items of different color or embossing of the same width may be grouped for quantity price provided all grouped items are same material specifications. Deduct .005 per lb. from base price for 50,000 lbs. quantity, grouped as above.

Carload Shipments: Deduct .005 per lb. from quantity price for carload shipments. Minimum weight 30,000 lbs. unmounted and 40,000 lbs. mounted.

Narrow Sizes (Coiled or Rectangular): Add following charges per pound:

	.001" Alum. and Heavier (Sand Blast)	Under .001" to .0005"	Lighter than .0005"
1½ to 1" Incl.	.02	.04	.06
1 to ⅝" Incl.	.04	.08	.12
⅝ to ⅜" Incl.	.06	.16	.24

Short Rolls: Add following charges for rolls containing less than 2 lbs. net metal per 1" width on sizes 1¼" and over:

	1¼"-.5" Base	.5" & Over Base
Approx. 2 lbs. per 1"	———	———
Approx. 1 lb. per 1", add	.01 lb.	.01 lb.
Approx. ½ lb. per 1", add	.02 lb.	.015 lb.
Approx. ¼ lb. per 1", add	.045 lb.	.025 lb.
Approx. ⅛ lb. per 1", add	.09 lb.	.075 lb.

High Purity Aluminum (for Condenser and Marine use): Add following charges to quantity prices:

Minimum purity	99.5%	99.9+%
Over .00035 to .0005"	.12 per lb.	———
Over .0005 to .00035"	.09 per lb.	———
Over .001 to .0005"	.07 per lb.	———
.001" and heavier	.06 per lb.	.24 per lb.

Lithographic Specifications: Add .05 per lb. to rectangular quantity price for Hard Aluminum .005" and heavier, to insure sheets free from wrinkles and surface defects.

Clear Lacquered: Deduct .003 per M square inches from colored price.

Special Hard or Semi-Hard Highly Polished Finish: Add following:
.05 per lb.—.001" and heavier;
.07 per lb.—.001" to .0004", minimum gauge.
Apply on metal contacts of interleaved.

Protective Coating (Clear): Add to plain material prices on area basis and convert to weight price using 2 lbs. resin, one side, to determine yield. Per M sq. ins.

	Coated 1 Side	Coated 2 Sides
.001" and lighter	.02	.025
.001 to .002", inclusive	.025	.04
.002 to .005", inclusive	.04	.06

Brushing: Add .012 per M square inches plus .02 per lb. for producing special dull finish on Aluminum gauge .0004" and heavier.

Colored Waxed Paper: Add .01 per lb. to quantity price. Quote only tentatively, subject to special arrangements.

Die Cut Pieces: Special shape cuts can be supplied within certain limits. Add following charges to rectangular prices:

Approx. Metal Area	Smooth	Embossed
20-40 sq. ins.	.14 lb.	.16 lb.
10-20 sq. ins.	.18 lb.	.34 lb.
5-10 sq. ins.	.25 lb.	.50 lb.

For colored metal add 1½ regular coloring difference.

Wide Coils and Mill Trim Possibles: Widths over 36½" may be supplied by special arrangement with main office. Mill widths 12½" to 12¾" are subject to trim penalties which may be waived on standard specifications in regular production.

General Aluminum Data:

To determine metal yield of given metal thickness (gauge): Divide 10.25 sq. ins. by metal thickness (fraction of inch).

To determine metal gauge thickness of given metal yield: Divide 10.25 sq. ins. by metal yield (sq. ins. per lb.)

To obtain yield of mounted foil, determine weight metal per ream (4.05 lbs. for each .0001" thickness), add weight of backing (paper plus adhesive, coating, etc.), divide total ream weight into 415,000 square inches (ream basis).

All weights shown in material specifications refer to our standard paper ream basis 24x36—480 sheets, showing a total area of exactly 414,720 square inches.

EXAMPLES OF COMPUTATION
(Figure all prices on weight basis)

.0005" Plain Aluminum:
Soft Wrappers—500 lbs. Quantity

Price: Base	.49
Rectangular Cut	.04
Quantity	.03
	.56 per lb.

.0005" Plain Aluminum, Mounted 30 lb. Waxed Crimpproof:
6" Rolls—2,000 lbs. Quantity

Price: Base	.31
Crimpproof Differential	.045 (9,950x.005)
Quantity	.01
	.365 per lb.

.0004" Aluminum:
20" Rolls (500 ft. lengths)
1,000 lbs. Smooth Silver
1,000 lbs. Embossed Silver
3,000 lbs. Smooth Colored

	SMOOTH SILVER	EMBOSSED SILVER	SMOOTH COLORED
Price: Base	.48	.575	.72
Short Rolls	.035	.035	.035
Quan. 5,000 lbs.	.005	.005	.005
Per lb.	.52	.575	.76

.001" Aluminum (Protective Coating Both Sides):
3" Rolls—2,000 lbs. Quantity

Price: Base .45	.0139 M sq. ins.
Coating 2 Sides (4 lbs.)	.023 M sq. ins.
	.0369
New Yield, 9,320x.0369	.345
Quantity	.015
	.44 per lb.

.0005" Plain Aluminum, Mounted 20 lb. Waxed Paper:
3" Diam. Circles—1,000 lbs. Quantity

Price: Base 16 lb.	.28
Rectangular cut	.01
	.29
20 lb. Backing (deduct)	.025
	.265
Die Cutting (5.50 sq.in.)	.121
	.417 per lb.

EXHIBIT 3 (CONTD.)

Slight differences will be found in the fixed area differentials within each group caused by treatment of fractions on pound prices and reconverting to square inch price equivalents.

Master List Complements

When prices are built in the manner described rather than created by some less exact method, there is much better chance of maintaining uniformity throughout the whole price structure and nothing will remain which might cause customers to doubt the existence of a consistent fair-price practice. This doubt invariably leads to chiselling and some buyers need nothing more than a weak explanation of a slight price difference to start the ball rolling. To avoid dangerous conditions of this kind, it becomes essential, especially in a made-to-order manufacturing business, to develop flexible pricing lists rather than fixed article price lists.

In addition to the idea of a single master list containing differentials for variations, this same principle may be projected to include other pricing lists which may be used as complements to master lists. Separate lists become necessary when differentials to base figures may have a great many different variations, such as printing.

This feature of master list complements is clearly illustrated in Exhibits 4 and 5.

It will be seen that Exhibit 4 is a base material list, comparable to "Rolled Aluminum" list of Exhibit 3, containing all differentials typical on these specifications. In addition to extra charges covering variations in material, character of surface and form, this list also carries differentials for special width which is just as much a part of cost as any other factor in continuous web processing operations.

Exhibit 5 is a "Printing Price Basis" complementing any base material pricing lists such as those presented in Exhibits 3 and 4. Including four different types of printing, each with a great many possible variations, this list may apply against any base material taken from a published master list. It is pertinent to note that the printing list presents a list of "Typical Stock Prices" taken from other lists and included for convenience with these printing differentials.

REYNOLDS METAL

LINING STOCK

(Rolled Aluminum with Solid Laminated Paper Backing)

This material is manufactured special to order according to various standard specifications. It is furnished in bulk form and used principally in conversion and packaging fields. Effectively applied as liners, bags, wrappers, labels, box-wraps, etc.

PRICE LIST

JUNE 15,

(Subject to Change Without Notice)

GENERAL TERMS OF SALE:

(Selling Unit may be either by Weight or Area Subject to Yield Tolerance of less than 10% Plus or Minus Theoretical)

Credit: Net Amount, 30 days, subject to acceptable arrangements with our Credit Department.

Shipping: Freight Prepaid on Shipments of 125 lbs. or more, not to exceed $1.50 Cwt.

Cores: Material furnished in rolls will contain Standard Fibre Cores with diameters 1 5/16", 2¼" or 3" according to our standard practice or customers specifications.

Quantity Delivered Against Order: On manufactured orders an overrun or underrun of less than 10% may be considered complete delivery.

Service: Normally shipments against orders of standard specifications may be expected to begin within two weeks after receipt of order. Longer terms required during peak production periods or for manufacture of special items.

REYNOLDS METALS COMPANY

Federal Reserve Bank Building

Richmond, Virginia

Offices in Principal Cities of the United States

EXHIBIT 4

EXHIBIT 4 (CONTD.)

ROLLED ALUMINUM "LINING STOCK"

EXHIBIT 4 (CONTD.)

ROLLED ALUMINUM "LINING STOCK"

Solid Laminated Paper Backing

Standard Specifications 26" Wide Mill Rolls—Fibre Cores

BASE PRICES: (Selling Unit: Weight or Area)

Plain Aluminum .00035" Gauge	STANDARD GLUB			SPECIAL ADHESIVES				
PAPER BACKINGS	Yields Sq. Ins. Per. Lb.	Prices Per Lb.	Prices Equiv. M Sq. Ins.	KINDS	Weights Per Ream	Yields Sq. Ins. Per. Lb.	Prices Per Lb.	Prices Equiv. M Sq. Ins.
Single Mountings								
15-lb. Tissue	13292	.367	.0276					
19-lb. Genuine Glassine	11782	.401	.0340	P. D. 300—Wax	6 lbs.	10580	.344	.0325
24-lb. Genuine Glassine	10316	.362	.0351	P. D. 300—Wax	6 lbs.	9383	.315	.0336
19-lb. Special Glassine	11782	.369	.0313	P. D. 300—Wax	6 lbs.	10580	.315	.0298
24-lb. Special Glassine	10316	.336	.0326	P. D. 300—Wax	6 lbs.	9383	.292	.0311
29-lb. Special Glassine	9175	.314	.0342	P. D. 300—Wax	6 lbs.	8429	.276	.0327
20-lb. Bond	11456	.333	.0291					
25-lb. Bond	10066	.306	.0304					
30-lb. Bond	8977	.284	.0316					
35-lb. Bond	8100	.256	.0316					
30-lb. Process Liner	8977	.265	.0295					
30-lb. Kraft	8977	.267	.0297	Reynolite	11 lbs.	7513	.220	.0293
40-lb. Kraft	7379	.237	.0321	Reynolite	13 lbs.	6171	.197	.0320
0-lb. Kraft	5443	.200	.0367	Reynolite	15 lbs.	4649	.171	.0367
80-lb. Kraft	4311	.172	.0400	Reynolite	16 lbs.	3763	.151	.0400
Duplex Metal Mounting (One Side Glue and the Other Side Reynolite Adhesives)								
15-lb. Tissue				Glue/Reynolite	2/7 lbs.	7915	.419	.0530
20-lb. Bond				Glue/Reynolite	2/9 lbs.	6982	.383	.0548
Duplex Paper Mounting (Metal Between Two Paper Surfaces)								
30-lb. Kraft				Reynolite	11/11 lbs.	4311	.185	.0430
40-lb. Kraft				Reynolite	13/13 lbs.	3450	.166	.0480
60-lb. Kraft				Reynolite	15/15 lbs.	2526	.145	.0575

EXHIBIT 4 (CONTD.)

EXTRA CHARGES (Differentials Per M Square Inches)

Add to Base Prices:	
For Metal Gauge .0004"	.002
For Metal Gauge .0005"	.0065
For Metal Gauge .00065"	.013
For Embossed Surface	.003
For Lacquered Surface—Clear	.010
For Lacquered Surface—Golds, Salmon, Copper	.012
For Lacquered Surface—Other Standard Colors	.014
For Slitting From Mill Widths to sizes oves 1½"	N/C
For Slitting 1½ to 1" Inclusive	.003
For Slitting Under 1 to ½"	.006
For Slitting Under ½ to ⅛"	.012
For Sheeting	.003
For Sheeting and Cutting (Min. 3")	.004

Mill Trim Penalties: For mill widths less than 26" or narrow slit sizes which cannot be cut without trim from 26" width, penalties must be added to base prices according to mill width classification shown in schedule, "For Special Widths." The first three columns show penalties for types of plain stock and the last three columns show additional penalties which apply as follows:

Paper Trim—Penalty added on all orders for less than 25MM square inches.

Embossing and Lacquering—Penalties added according to process application.

Wide and Extra Wide Stock: Widths over 26" to 30" may be furnished in minimum quantities of 25MM square inches at same price as 26" plain stock. Refer to main office all inquiries for decorating differentials on wide stock.

Extra wide stock may be produced up to 56" consisting of two strips of metal laminated across sheet forming a butt or slight overlap seam where the strips join together. All inquiries for extra wide stock in required minimum quantity of 25MM square inches should be referred to main office for limitations, recommendations, and pricing.

Example of Price Computation:

5MM Square Inches—4" Rolls
.0004" Gold Lacquared GS2—30B3
Computed yield 8464 sq. ins. per lb.

Base Price .00035/30B3		.0316 M sq. ins.
Add for .0004" Alum		.0020 M sq. ins.
Add for Gold Lacquer		.0120 M sq. ins.
24" Mill Width Penalty (4" x 6 cuts)		
Single Mounting	.001	
Paper Trim	.0008	
Lacquering	.0006	.0024 M sq. ins.
Adjusted Base Price		.0480 M sq. ins.
Add Quantity Adjustment		.0045 M sq. ins.
Quantity Price		.0525 M sq. ins.

Price Equivalent 8464 x .0525=.445 Per lb.

FOR SPECIAL WIDTHS: (Mill Trim Penalties)

	Add to Base Prices per M Square Inches					
MILL WIDTHS	Single Mounting (Plain)	Plain Duplex Metal	Plain Duplex Paper	Add Differentials Paper Trim	Add Differentials Embossing	Add Differentials Lacquering
26" Standard	Base	Base	Base	Base	Base	Base
23" Over	.0010	.0020	.0015	.0008	.0003	.0006
20" Over	.0024	.0048	.0036	.0018	.0006	.0012
18" Over	.0036	.0072	.0054	.0026	.0009	.0018
16" Over	.0050	.0100	.0075	.0038	.0013	.0026

Note:. Double Paper Trim Penalty for Duplex Paper.

QUANTITY ADJUSTMENTS:

(Per M Sq. Ins.) Carload — Deduct	Silver	Colored
100000 M Sq. Ins.	.001	.001
50000 M Sq. Ins. Add	Base	Base
20000 M Sq. Ins. Add	.0005	.0005
10000 M Sq. Ins. Add	.001	.0015
5000 M Sq. Ins. Add	.002	.003
2000 M Sq. Ins. Add	.003	.0045
1000 M Sq. Ins. Add	.006	.009
	.012	.018

REYNOLDS METAL PRINTING

●

PRICE LIST

September 1,
(Subject to change without notice)

●

GENERAL TERMS OF SALE:

(Selling Unit is by Area converted to per 1,000 pieces according to sizes specified)

Credit: Net amount, 30 days, subject to acceptable arrangements with our credit department.

Shipping: Freight prepaid on Shipments of 125 lbs. or more, not to exceed $1.50 cwt.

Preparatory Charges: Art work, printing plates and cutting dies will be charged extra only on the initial order at the time of the first shipment. Charges for subsequent replacements due to wear, but not specification changes, shall be absorbed by Reynolds. All or part of preparatory charge may be waived on initial orders of established designs, produced by letterpress process, to the extent of 20% of original order value.

Quantity Delivered Against Order: An overrun or underrun of less than 10% of quantity on order may be considered complete delivery.

Service: Normally, shipments against initial printing orders of standard specifications may be expected to begin in about three weeks after receipt of order and approval of printing design. Longer terms required during peak production periods or for manufacture of special items. On repeat orders shipments may normally be expected to begin within three weeks after receipt of order.

●

REYNOLDS METALS COMPANY
Federal Reserve Bank Building
Richmond, Virginia

OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES

EXHIBIT 5

Exhibit 5 (Contd.)

PRINTING PRICE BASIS

Differentials to be added to Plain Stock List Prices.
(Based on Stock Widths 22" to 26".)

BASE DIFFERENTIALS For 1-Color Printing	ROTOGRAVURE		SHEET GRAVURE		ANILINE		LETTER PRESS	
	Per M sq. ins.	Plus—per M Pieces	Per M sq. ins.	Plus—per M Pieces	Per M sq. ins.	Plus—per M Pieces	Per M sq. ins.	Plus—per M Pieces
Rotary:								
Unmounted Alum.								
Mounted 11 to 24 lb. backing								
Mounted 25 to 60 lb. backing								
Mounted 61 to 135 lb. backing	.016	.065			.015	.055		
Mounted 12 to 15 pt. backing	.021	.08			.02	.07		
(Note: Piece Area can/dimpose design in squares of roll width plus 30%)								
Flat (Rectangular):								
Unmounted Alum.							.0125	.065
Mounted 11 to 24 lb. backing							.0135	.08
Mounted 25 to 60 lb. backing	.0175	.14	.026	.14	.018	.13	.0155	.115
Mounted 61 to 135 lb. backing	.023	.20	.032	.20	.024	.19	.0195	.17

BASE ADJUSTMENTS Add to flat	ROTOGRAVURE				SHEET GRAVURE				ANILINE				LETTER PRESS			
Die Cutting, corr. base (Allow 3/16" trim to each dimension)																
Unmounted Alum.	.0005	.035			.0005	.035			.0005	.035			.0005	.03		
Mtd. 11-24 lb.	.0005	.05			.0005	.05			.0005	.05			.0005	.045		
Mtd. 25-60 lb.	.0005	.065			.0005	.065			.0005	.065			.001	.06		
Mtd. 61-135 lb.	.001	.10			.001	.10			.001	.10			.001	.095		
Mtd. 12-15 pt.	.001	.05			.001	.05			.001	.05			.003	.05		
Add to Design Postage 1-color base (Per M square inches)	Unmtd 11-24#	25-60#	61-135#	12-15pt.	11-24#	25-60#	61-135#	12-15pt.	Unmtd 11-24#	25-60#	61-135#	12-15pt.	11-24#	25-60#	61-135#	12-15pt.
Each extra color					.0130	.0135	.0145	.0160					.0045	.0045	.0050	.0055
Prod. color background (Addition to extra color charge)	.0025	.0025	.0025	.0025	.0025	.0025	.0025	.0025	.002	.002	.002	.002				
Prod. design enlivened	.0115	.0115	.0120	.0120	.0115	.0115	.0120	.0120					.0055	.0055	.0060	.0065
Ea. solid or halftone col.													.0035	.0035	.0040	.0045
Ea. col. on deep etch. stock													.0040	.0040	.0045	.0050

Note: Deduct .0075 per M pieces for each 1-square inch less than 5 sq. ins. piece area.

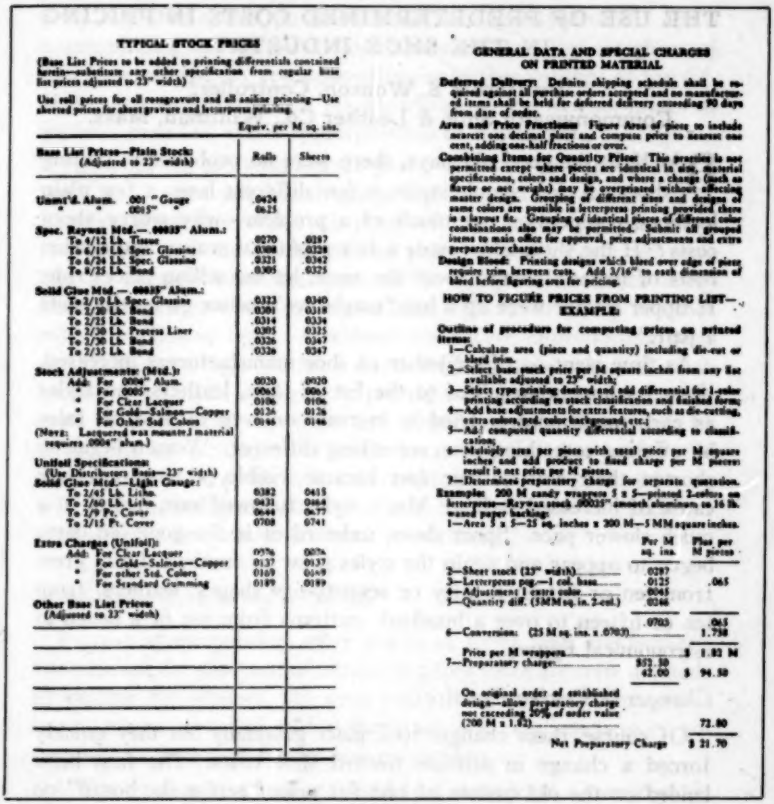
ADD: PREPARATORY CHARGES Add to 1-color base				
Quantities	1-Col.	Ea. Extra Col.	Design Emb.	Steel Die Cut
Under 20 Sq. Ins.				
50 MM sq. ins. and over	90.00	85.00	160.00	12.00
25 MM	90.00	82.00	154.00	12.00
10 MM	72.00	53.00	96.00	12.00
5 MM	53.00	46.00	82.00	12.00
2.5 MM	41.00	38.00	66.00	12.00
1 MM	32.00	25.00	40.00	12.00
500 M	27.00	21.00	32.00	12.00
250 M	23.50	18.00	26.00	12.00
20 to 40 Sq. Ins.				
25 MM Sq. Ins. And Over	73.00	67.00	122.00	15.00
10 MM	69.00	52.00	92.00	15.00
5 MM	52.50	42.00	72.00	15.00
2.5 MM	42.00	34.00	56.00	15.00
1 MM	33.00	26.00	40.00	15.00
500 M	28.50	22.00	32.00	15.00
250 M	25.50	19.00	26.00	15.00
40 Sq. Ins. Over				
25 MM Sq. Ins. And Over	66.00	59.00	109.00	18.00
10 MM	66.00	52.00	90.00	18.00
5 MM	52.00	42.00	70.00	18.00
2.5 MM	43.50	34.00	54.00	18.00
1 MM	35.00	27.00	40.00	18.00
500 M	31.00	23.00	32.00	18.00
250 M	28.00	20.50	27.00	18.00

Halftone Colors—Add 25% to "Each extra color" charge.
Steel-Rule Dies for Heavy Stock—Special quotations 15.00 to 75.00

Add Quantity Differentials (Per M square inches)	ROTOGRAVURE 1-Col.	ROTOGRAVURE ADD TO 1 COL. Ea. Extra Col.	ROTOGRAVURE ADD TO 1 COL. Design Emb.	ROTOGRAVURE ADD TO 1 COL. Die Cut	SHEET GRAVURE 1-Col.	SHEET GRAVURE ADD TO 1 COL. Ea. Extra Col.	SHEET GRAVURE ADD TO 1 COL. Design Emb.	SHEET GRAVURE ADD TO 1 COL. Die Cut	ANILINE 1-Col.	ANILINE ADD TO 1 COL. Ea. Extra Col.	ANILINE ADD TO 1 COL. Design Emb.	ANILINE ADD TO 1 COL. Die Cut
250 MM sq. ins.	.0002	.0001	.0002	Base	.0001	Base	.0002	Base	.0001	Base		Base
100 MM sq. ins.	.0005	.0002	.0005	.0001	.0003	.0001	.0005	.0001	.0003	.0001		.0001
50 MM sq. ins.	.0010	.0003	.0009	.0002	.0006	.0002	.0009	.0002	.0006	.0002		.0002
25 MM sq. ins.	.0030	.0015	.0015	.0003	.0012	.0004	.0018	.0003	.0012	.0004		.0003
10 MM sq. ins.	.0090	.0015	.0045	.0006	.0030	.0010	.0045	.0008	.0030	.0010		.0008
5 MM sq. ins.	.0100	.0030	.0090	.0015	.0060	.0020	.0090	.0015	.0060	.0020		.0015
2.5 MM sq. ins.					.0120	.0040	.0180	.0030	.0120	.0040		.0030
1 MM sq. ins.					.0300	.0100	.0450	.0075	.0300	.0100		.0075
500 M sq. ins.					.0600	.0200	.0900	.0150	.0600	.0200		.0150
250 M sq. ins.					.1200	.0400	.1800	.0300				
Preparatory Charges (Line)	80.00	75.00	75.00	15.00	65.00	60.00	75.00	15.00	50.00	45.00		15.00
(Process Tone)	110.00	100.00			90.00	80.00						

LETTER PRESS Under 20 Sq. Ins. 1-Col.	Add to 1-Col. Ea. Extra Col.	Add to 1-Col. Design Emb.	20 to 40 Sq. Ins. 1-Col.	40 Sq. Ins. Over Add to 1-Col. Each Extra Col.	40 Sq. Ins. Over Add to 1-Col. Design Emb.	Add Die Cut
.0003	.0002	.0004	.0002	.0001	.0003	.0001
.0009	.0006	.0011	.0006	.0004	.0007	.0005
.0018	.0012	.0022	.0012	.0008	.0014	.0010
.0036	.0025	.0045	.0025	.0016	.0029	.0019
.0093	.0067	.0107	.0067	.0044	.0075	.0052
.0173	.0157	.0223	.0134	.0112	.0164	.0112
.0301	.0255	.0363	.0235	.0198	.0282	.0196
.0639	.0468	.0683	.0533	.0385	.0565	.0478
.1115	.0743	.1123	.0936	.0633	.0963	.0874
.1910	.1210	.1890	.1745	.1045	.1645	.1633
						.0935
						.1495
(See letterpress preparatory schedule above)						

Note: All preparatory charges include necessary art work and plates but not special original designing and color sketches.



TYPICAL STOCK PRICES

(Base List Prices to be added to printing differentials contained herein—substitute any other specification from regular base list prices adjusted to 23" width)

Use roll prices for all rotogravure and all aniline printing—Use sheeted prices for sheet gravure and letterpress printing.

Base List Prices—Plain Stock: (Adjusted to 23" width)	Equiv. per M sq. ins. Rolls	Sheets
Unmt'd. Alum. .001" Gauge	.0424	
" .0015" "	.0625	
Spec. Reynos Mtd.— .00035" Alum.:		
To 4/12 Lb. Tissue	.0270	.0297
To 6/19 Lb. Spec. Glassine	.0308	.0328
To 6/24 Lb. Spec. Glassine	.0321	.0342
To 6/25 Lb. Bond	.0305	.0325
Solid Glue Mtd.— .00035" Alum.:		
To 2/19 Lb. Spec. Glassine	.0323	.0340
To 2/20 Lb. Bond	.0301	.0318
To 2/25 Lb. Bond	.0314	.0336
To 2/30 Lb. Process Liner	.0305	.0325
To 2/30 Lb. Bond	.0326	.0347
To 2/35 Lb. Bond	.0326	.0347
Stock Adjustments: (Mtd.):		
Add: For .0006" Alum.	.0020	.0020
" For .0005" "	.0065	.0065
" For Clear Lacquer	.0106	.0106
" For Gold—Salmon—Copper	.0126	.0126
" For Other Std. Colors	.0146	.0146
(Note: Lacquered wax mounted material requires .0004" alum.)		
Unifoil Specifications: (Use Distributors Basis—23" width)		
Solid Glue Mtd.—Light Gauge:		
To 2/45 Lb. Litho.	.0382	.0415
To 2/60 Lb. Litho.	.0431	.0464
To 2/9 Pt. Cover	.0644	.0677
To 2/15 Pt. Cover	.0708	.0741
Extra Charges (Unifoil):	.007h	.007h
Add: For Clear Lacquer	.0137	.0137
" For Gold—Salmon—Copper	.0169	.0169
" For other Std. Colors	.0189	.0189
" For Standard Gumming		
Other Base List Prices: (Adjusted to 23" width)		

GENERAL DATA AND SPECIAL CHARGES ON PRINTED MATERIAL

Deferred Delivery: Definite shipping schedule shall be required against all purchase orders accepted and no manufactured items shall be held for deferred delivery exceeding 90 days from date of order.

Area and Price Fractions: Figure Area of piece to include nearest one decimal place and compute price to nearest one cent, adding one-half fractions or over.

Combining Items for Quantity Price: This practice is not permitted except where pieces are identical in size, material specifications, colors and design, and where a change (such as flavor or net weight) may be overprinted without affecting master design. Grouping of different sizes and designs of same colors are possible in letterpress printing provided there is a layout fit. Grouping of identical pieces of different color combinations also may be permitted. Submit all grouped items to main office for approval, price adjustments and extra preparatory charges.

Design Bleed: Printing designs which bleed over edge of piece require trim between cuts. Add 3/16" to each dimension of bleed before figuring area for pricing.

HOW TO FIGURE PRICES FROM PRINTING LIST—EXAMPLE:

Outline of procedure for computing prices on printed items:

1—Calculate area (piece and quantity) including die-cut or bleed trim.

2—Select base stock price per M square inches from any list available adjusted to 23" width;

3—Select type printing desired and add differential for 1-color printing according to stock classification and finished form;

4—Add base adjustments for extra features, such as die-cutting, extra colors, ptd. color background, etc.;

5—Add computed quantity differential according to classifications;

6—Multiply area per piece with total price per M square inches and add product to fixed charge per M pieces; result is net price per M pieces.

7—Determine preparatory charge for separate quotation.

Example: 200 M candy wrappers 5 x 5—printed 2-colors on letterpress—Reynos stock .00025" smooth aluminum, to 16 lb. waxed paper backing:

1—Area 5 x 5—25 sq. inches x 200 M—5 MM square inches.

	Per M sq. ins.	Plus per M pieces
2—Sheet stock (23" width)	.0297	
3—Letterpress pcg.—1 col. base	.0125	.065
4—Adjustment 1 extra color	.0045	
5—Quantity diff. (5MM sq. in. 2-col.)	.0246	
	.0703	.065
6—Conversion: (25 M sq. ins. x .0703)		1.758
Price per M wrappers		$ 1.82 M
7—Preparatory charge	$52.30	
	42.00	$ 94.30
On original order of established design—allow preparatory charge not exceeding 20% of order value (200 M x 1.82)		72.80
Net Preparatory Charge		$ 21.70

Notes: All preparatory charges include necessary art work and plates but cost special original designing and color sketches.

EXHIBIT 5 (CONTD.)

Conclusion

Since the primary purpose of exhibiting price lists was to show application of principle, it is considered unnecessary to demonstrate list price computations. Besides, if these price lists alone are not sufficiently clear for interpretation, then there may be a justifiable complaint of misrepresentation and the author will not mention the subject again—if you don't.

THE USE OF PREDETERMINED COSTS IN PRICING IN THE SHOE INDUSTRY

By Harold S. Wonson, Controller,
Commonwealth Shoe & Leather Co., Whitman, Mass.

BACK in the good old days, there were no problems in costing shoes. A few simple styles, a few different lasts, a few plain leathers, competition not much of a problem—why worry about costs? If the shoemaker made a fair profit last season and market costs of materials were about the same, let the selling prices ride. If upper leather were up a bit, "maybe we'd better go up ten cents a pair."

As time went on, the number of shoe manufacturers increased. Keener competition added to the list of lasts, leathers and styles as each manufacturer tried to increase or even to hold his sales by offering something new, something different. Women began to shorten their skirts, their feet became visible, a most effective cause of increased styling. Men's styles followed suit, though at a much slower pace. Sport shoes, unheard of in the good old days, began to appear and again the styles grew in number. Lasts grew from ten or fifteen to fifty or seventy-five shapes, leathers, from ten or fifteen to over a hundred; patterns from ten or a dozen to astronomical figures.

Changes in Pricing Practice

Of course, these changes took place gradually but they quickly forced a change in attitude toward shoe costs. The first blow landed on the old custom of one flat price "across the board" on all the shoes in a given grade. The keener buyers would concentrate on the more costly shoes, which by the flat price plan were priced too low, and would buy the simpler styles from the more up-to-date competitors, since the simpler styles were too high in price.

The first costing methods were sketchy and inaccurate, although they did result in higher prices for the more complicated shoes and for the shoes made of more expensive leathers, with a corresponding lowering in the prices of the simpler shoes. Usually, the head of the company did the cost work. Ordinarily, he selected a few shoes, fairly representative of the different types made by his com-

pany, and for each type worked out an approximate cost and a corresponding selling price which was used for all of the shoes of that general type. A few tests of upper leather cuttings of the different types of shoes with his knowledge of the market prices of leathers gave him a fair approximation of upper costs.

As most of the sole leather parts, outsoles, insoles, counters, heels, etc., were purchased ready for use, his sole leather costs were reasonably accurate. A study of the factory payrolls for a few weeks and the corresponding pairs of shoes produced gave him an average labor cost per pair to which he added 10 or 15 cents per pair to cover the extra labor costs of wing tip or other more complicated types. Overhead costs were unproductive costs and therefore a high overhead was something to be ashamed of, so he added 10 cents a pair or 5 per cent of the total of the other costs or some other fictitious and most inaccurate figure, but he offset this by tacking on a juicy $1.00 per pair for profit. Of course, this $1.00 profit was never realized, the company did very well if the actual profit was 25¢ a pair, but the boss could stick out his chest and brag about his low (?) overhead.

More Accurate Costing Required

Increasing competition, more and more styles, lasts and leathers, have forced the shoe manufacturer to adopt more accurate methods of costing his product, but even today there are many manufacturers whose so-called cost systems are not very much more accurate than the rough system just referred to.

While no shoe cost system, based as it must be to a considerable extent on good guesses, can be exact, possibly 15 per cent of the shoe manufacturers today use cost systems which, while not absolutely correct, are sufficiently accurate for all practical purposes. It is such a system that I will try to describe to you. The final computation of the cost of a particular shoe, given a complete and detailed description of that shoe and a detailed cost catalog covering every item of materials, labor and expense that can be called for on any shoe is extremely simple, only a problem in addition. The preparation of the detailed cost catalogs is not as simple, but it is in the correct preparation of these cost catalogs that the accuracy of any cost system lies.

Before we can begin to make our cost catalogs, we must know with reasonable accuracy what shoes we are going to make and how many shoes we are going to make. Shall we plan on a production of 100 dozen, 150 dozen or 200 dozen a day? Our organization, both in the office and in the factory, will differ substantially, as will our fixed overhead costs, with the different volumes. Will the shoes be made from leathers we already own at comparatively low costs or will they be made from leathers which we do not own and must purchase at higher market prices? Must we buy many new lasts, dies and patterns or will our prospective production utilize equipment we already own?

And so with us, the first step in costing our shoes is the preparation of a detailed sales budget.

The Sales Budget

1. A study of market price reports, business forecasts, reported inventory position of retailers, style trends, budgets and actual sales of previous seasons is made by company executives.

2. At a sales conference attended by all salesmen and executives, the results of these studies are reported to and discussed with the salesmen. The entire line of proposed styles is displayed and discussed in detail.

3. After the conference, each salesman makes an independent estimate of the probable sales in his territory by months and by quantities on each individual style of shoe.

4. After a study of the salesmen's estimates, independent estimates are made by the sales executives and merchandise managers.

5. All estimates are tabulated and discussed with the executives and merchandise managers, and the final sales budget is adopted.

The Production Budgets

1. The factory production budget, showing the required factory output by pairs, by grades and by months is computed mathematically from the sales budget, the finished goods inventory and the monthly basic in-stock requirements. The basic stock is the quantity, determined from experience, we must have on hand the first of each month, which, with the addition of the expected factory production during the month, will permit shipping to customers the quantity given in the sales budget. We have on an average,

ninety sizes and widths on each style and as the customers' orders by sizes and widths are somewhat erratic, we have found that, in order to ship 100,000 pairs to customers during a given month, we must have approximately 150,000 pairs available for shipment during that month.

2. The upper leather budget, showing the required purchases of the many kinds of upper leathers used, is computed mathematically from the factory production budget, the upper leather inventories, the upper leather on order, and the footage allowances for each style and kind of shoe.

3. The sole leather budget, showing the required purchase of the different grades and thickness of outsoles, insoles, counters, heels, etc., is also computed from the factory production budget, inventory and orders.

4. The budget for lasts, dies and patterns is computed from the factory production budget, broken down by lasts and patterns, and the equipment records. Necessary purchases of lasts, dies and patterns are made in accordance with this budget in order to obtain the use of such additional equipment early in the season.

The Expense Budgets

1. The factory manufacturing expense budget is drawn up after—

   a. A comparison of budgeted and actual costs of previous seasons.
   b. A consideration of possible major repairs.
   c. A consideration of possible changes in fixed expense items such as salaries, local taxes, etc.
   d. A study of the possible changes in variable expense items due to factory production changes based on the new production budget.
   e. Changes in market prices of expense materials.
   f. Discussion of preliminary figures with factory executives.

2. The same procedure is followed in drawing up the administrative expense budget and the selling expense budget.

3. The advertising expense budget is an independent and wholly planned budget. It may be large or small depending upon the advertising policy which the directors of the company elect to follow. New advertising methods may be adopted and old methods dropped.

National advertising may be changed from one group of magazines to another. Usually the directors of the company decide that a certain sum of money is to be spent on advertising and the advertising manager then draws up a tentative budget which is discussed with the board of directors and is adopted, usually, after some modification.

After the official seal of approval is placed on all of these budgets, we are ready to prepare the cost catalogs.

The Merchandise Catalogs

1. The upper leather cost catalog gives the standard prices per foot of every kind and every grade of upper leather to be called for. The standard prices are based on—
   a. The quantities of each kind and grade of leather required as given in the upper leather budget.
   b. The quantity and prices of the various kinds and grades of upper leather in the inventory.
   c. The quantities and prices of the various kinds and grades of upper leather on order.
   d. The quantities of each kind and grade of upper leather which must be purchased to complete the requirements, and the prices we expect to pay for them.

All the other merchandise standard costs are arrived at in the same way. These cost catalogs are—

2. The leather linings and trimmings catalog.
3. The cloth linings, doublers and stays catalog.
4. The sole leather catalog.
5. The direct findings catalog. Direct findings include all items which can be identified with a particular shoe, such as laces, eyelets, shanks, upper thread, bottom thread, box toes, etc.

The Labor Cost Catalogs

Ordinarily, the labor piece-work catalogs covering from 25,000 to 30,000 different piece rates require little change from one season to another. Minor adjustments in rates are made from time to time and occasionally the whole list must be changed when a percentage increase or decrease is made in labor rates.

The direct day labor costs and the indirect day labor are based upon the personnel of each required for the planned factory pro-

duction and the established weekly rates. The direct day labor consists of those operations actually performed on the shoes which, for one reason or another, it has been found impractical to put on piece work. The indirect day labor consists of such work as die boys and cripple cutters in the upper cutting department, floor girls and machinists in the stitching room, odd shoe boys, etc., in the various other factory departments. It should be noted that foremen and assistants, elevator men, janitors, lumpers, general factory machinists, carpenters, electricians, etc., are included in manufacturing expense and not in indirect day labor. The direct and indirect day labor costs may be included in the labor cost of each shoe as a flat charge of so many cents a pair based on the total payroll for such labor divided by the budgeted production or, and what is probably a more exact method, as a percentage of the total piece-work costs for each shoe.

The total of the piece-work labor on which this percentage is based may be computed from the computed total piece-work labor cost of each style and kind of shoe and the production budget. The total day work is readily computed from the day-work personnel required for the planned production and the regular rates of pay of each day-work operator.

For convenience and speed in costing the shoes on orders received from customers, the cost department, at the beginning of each season, computes the detailed labor costs for each of the several hundred styles in the sample line and gives these costs, classified by factory departments, to the cost clerks in the order department. The cost clerks also receive a labor change catalog which permits them to adjust the labor cost for any shoe ordered by a customer which differs, usually in a minor degree, from the nearest sample shoe. The factory departments, as classified, are as follows:

Cutting Room
Stitching Room
Sole Leather Room
Lasting Room
Bottoming Room
Finishing Room
Treeing and Dressing Room
Packing and Shipping Room

All costs are based on the cost of a shoe of average size and width, and periodic surveys are made of our sales by sizes and by widths so that, if necessary, adjustments may be made in the standard average size and width.

In order to properly cost each shoe, cost clerks in the order department are also given tables of allowances and construction:

Tables of Allowances and Construction

1. Tables of upper leather, leather linings and cloth items, give the parts and the footage required per pair of shoes for each individual shoe style by—

    1. Grade of shoe.
    2. Kind of leather.
    3. Grade of leather.

    Originally, each shoe manufacturer tried to determine his own footage requirements for each style of shoe. All of the methods used were more or less inaccurate. There are so many factors affecting the number of feet of leather required to cut a given pair of shoes that the job is one for an expert in this sort of work. The area of a pattern is of much less importance than its shape. Several different parts, vamps, tips, quarters, foxings, tongues, etc., must be cut from the same piece of leather at the same time. Each part must be cut from its proper portion of the skin. The pattern for each part must be placed on the skin in a certain direction so that the strain lines of the skin will coincide with the strain imposed on that part in lasting the shoes. Otherwise, the shoe will not hold its shape.

    More leather is wasted in cutting small skins, such as kid skins, than in cutting large kip skins. Tan shoes, for which each part must be matched in color to all other parts, require a greater footage than black shoes. Cheaper grades of leather require larger allowances than do the better grades, for in cutting this kind of leather surface imperfections must be avoided. Better grade shoes, for which each part cut must be as nearly perfect as possible, need greater allowances than do cheaper shoes on which minor imperfections are accepted. So today, most manufacturers call on companies which spe-

cialize in such work, for their allowance figures. These companies, using methods which are kept reasonably confidential, are given the patterns to be used by the shoe manufacturer and they return to the manufacturer complete tables showing the footage which should be allowed for those patterns for all the combinations of grades of shoes and kinds and grades of leather.

2. Sole leather items. While the quality and thickness of most sole leather items such as outsoles, insoles, counters, etc., is given in the specification for each individual shoe, these tables give the kind and height of heel required for each grade of shoe on each style of last, etc.
3. Findings. The kind and quality of direct findings such as eyelets, stays, bottom thread, upper thread, shanks, etc., to be used on each style and grade of shoe are specified.
4. Cartons, packing cases and packing supplies per pair are obtained from past experience.
5. Royalties per pair are based on past experience.
6. Lasts, dies and patterns per pair are also based on past experience.
7. Indirect findings and supplies per pair are based on experience and include about 180 items consisting of nails, tacks, gums, polishes, cements, etc., which cannot be identified with any particular shoe.

   In costing the allowances, consideration is of course given to changes in market costs, extraordinary changes in styles of lasts and patterns, etc.
8. Manufacturing expense. The cost per pair for each shoe is taken as a per cent of the total labor cost for that shoe. This per cent is based on the ratio of the total manufacturing expense budget in dollars to the estimated total labor cost in dollars, computed from the production budget.
9. Administrative Expense. The cost per pair for each shoe is taken as a per cent of the selling price for that shoe. This per cent is based on the ratio of the total administrative expense budget in dollars to the estimated total sales in dollars computed from the sales budget.
10. Selling expense is stated as a per cent of selling price.

11. Advertising expense is also stated as a per cent of selling price.
12. Customers' returns and allowances are dated as a per cent of selling price based on past experience.
13. Bad debts are dated as a per cent of selling price based on past experience.
14. Loss on samples are stated as a per cent of selling price based on past experience. This item represents the difference between the cost to the company of trial shoes, models and salesmen's samples and the amount the company receives from the sale of these shoes when no longer needed.
15. Salesmen's commissions are stated as a per cent of selling price.
16. Discounts are stated as a per cent of selling price.

When equipped with the merchandise and labor cost catalogs and the tables of allowances and construction, the cost clerks are ready for the actual figures.

Cost Figuring

At the beginning of each season the cost clerks are given the specifications of each shoe in the sample line, covering approximately 200 shoes. These shoes are referred to as base shoes. The specifications give a complete and detailed description of each shoe, including not only the last, pattern and all materials to be used, but a description in code of the methods of fitting, trimming, perforating, etc., to be used and the expected selling price.

All of these base shoes are completely costed at once, so that if a change from the estimated selling price which accompanied the specification is necessary, it may be made immediately. In 99 cases out of 100, no such change is necessary, for the company executives know the cost of each shoe for the previous season and also the changes which have taken place in materials or labor costs. No attempt is made to arrive at a uniform profit on each style of shoe. For example, in a group of fifteen or twenty shoes representing a grade to be sold at, let us say, $5.35, some shoes may show a profit of twenty to thirty cents a pair and others only ten to fifteen cents a pair.

All shoes for the in-stock department are made exactly in accordance with these specifications. All shoes sold on special cus-

tomers' orders are based on the samples or base shoes but may differ in minor details from the base shoe. Such shoes must be costed individually, but the changes are ordinarily so slight that the costing can readily be done by addition to or deduction from the costs of the corresponding base shoe to cover materials or labor operations added or omitted.

The standard costs established at the beginning of each season, which are used to establish the selling prices at that time, are also used for accounting purposes throughout the season and, for that reason, cannot be changed during the season. However, if unexpected and drastic changes, either up or down, in the market costs of materials or labor occur during the season, costs are refigured, but only for use in revising selling prices.

The following table shows in detail the specifications, all cost items, and the sources from which the cost of each item is obtained. All descriptions, allowances and costs are fictitious.

SPECIFICATIONS AND COST SHEET

Sources—M Mechandise Catalog
A Allowance Catalog
C Construction Catalog
L Labor Catalog
S Specifications

Specifications	*Cost Classification*	*Cost*	*Sources*
Sample No. 9999	–	–	–
Grade B	–	–	–
Last 999	–	–	–
Pattern 99 L. Oxford	–	–	–
	UPPER LEATHER		
Vamp B Black Calf	Vamp) 2.55 ft. x .33	.842	S M A
Top "	Top)		S M A
Tip "	Tip)		S M A
Tongue "	Tongue)		S M A
Foxing –	Foxing		S M A
Lacestay –	Lacestay		S M A
Backstay –	Backstay	.842	S M A
	LININGS & TRIMMINGS		
Lining 99 Kip	Lining .80 x .21	.168	S M A
Vamp Lining T	Vamp Lining)	.052	S M A
	Tongue Lining)		C M A
	Vamp Doubler)		C M A
	Top Doubler)	.047	C M A
	Tip Doubler)		C M A

		Eyelet Stay	.002		C M A
		Miscl. Stays	.003	.272	C M A
		Bottom Stock			
Outsole	9X	Outsole	.370		S M
Insole	6G	Insole	.200		S M
Midsole		Midsole			S M
Tap		Tap			S M
Welt	½ x ⅜	Welt	.056		S M A
Counter	2L	Counter	.095		S M
Heel	2	Heel	.074		S M C
Toplift	B Rub	Toplift	.055		S M
Rand		Rand		.850	S M C
		Findings			
		Upper Thread	.021		C M A
Eyelets	6 Inv.	Eyelets	.066		S M C
Lining Label	999	Lining Label	.010		S M C
		Covers			C M
Box Toe	C	Box Toe	.034		S M C
		Bottom Thread	.019		C M A
		Shanks	.020		C M
		Slugwire			C M A
Golf Studs		Golf Studs			S M A
		Heel Pods	.015		C M A
Laces	36G	Laces	.022		S M C
Sock Lining		Stock Linings			S M A
		Embossing		.207	C M
Construction Details		**Labor**			
Perforation		Cutting	.171		L
Tip Perforation	99	Stitching	.162		L
Eyelet Row	99	Sole Leather	.082		L
Fitting	2	Lasting	.135		L
Color		Bottoming	.217		L
Size Code	B	Finishing	.063		L
Stitching	FC	Treeing	.051		L
Heel Edge		Packing	.054	.935	L
Sole Edge	15	**Allowances**			
Trim	R	Mfg. Expense	.235		A % Labor
Slug		Lasts, Dies & Patterns	.060		A
Finish Forepart	110	Royalty	.095		A
" Shank	55	Findings Indirect	.054		A
" Toplift		Cases & Cartons	.060		A
Wheel	55	S. S. Taxes	.046	.550	A
Forepart Stamp	B	TOTAL FACTORY COST		3.656	
Shank Stamp		Adm. Expense	.072		A % Selling Price
Gild or Brand		Selling Expense	.096		A % Selling Price
How Lace		Advertising	.240		A % Selling Price
Dress	B	Rets & Allowances	.048		A % Selling Price

Carton	Bed Debts	.024		A % Selling Price
Cover Top	Loss on Sample	.048		A % Selling Price
Cover Strip	Commission	.240	.768	A % Selling Price
Carton Label	Total Cost		4.424	
	Profit		.328	
	Net Selling Price		4.752	
	Sales Discount		.048	A % Selling Price
	GROSS SELLING PRICE		$4.800	

Explanation of Specifications and Cost Sheet

The shoe described and costed is a simple black calf lace oxford to be made in a medium grade. All parts of the upper are cut from the same leather and the allowance catalog tells us that we require 2.55 square feet of uncut leather to produce the vamps, tops, tips and tongues for one pair of shoes. The merchandise catalog tells us that the standard cost of B grade black calf is 33 cents a foot. This shoes does not require foxings, lacestays or backstays. If the shoe were to be made of more than one kind of upper leather, such as a white buck style with tan calf wing tips, foxings and lacestays, the allowance catalog would give us the footage required for each part and the merchandise catalog the price per foot of each kind of leather to be used.

Parts such as tongue linings, all doublers and stays are standardized by shoe styles and upper leather groups and for that reason are omitted from the specifications and factory tags. The construction catalogs tell the cost clerks and the factory departments the items required for the shoes to be made and the cost of these items is then computed from the allowance catalog and the merchandise catalog.

This is also true of many of the findings listed. The shoe we are describing and many similar shoes will always use the same kind and quantity of upper thread, bottom thread, etc. In the case of eyelets, however, this shoe might be made with invisible eyelets or black visible eyelets of several different shapes. It is, therefore, necessary to specify and print on the factory tags the particular kind of eyelets to be used. Covers, on the other hand, are used only to protect white or other soilable leathers while going

through the factory processes, and their use is governed by the construction catalog.

Labor operations are standardized by styles and grades of shoes, kinds of upper leather, etc., but variations from standard construction must be specified as construction details and called for on the factory tags to insure the correct computation of labor costs and the construction of the shoe in accordance with the customers' wishes. Any one of several different styles of tip perforations can be used on most styles of shoes or the tip perforation may be omitted entirely and a stitched tip or plain unperforated tip called for, a change which will alter the labor costs. Similar changes are possible in all of the items listed under construction details. The absence of an entry after any of the items under construction details indicates that standard construction is to be followed. For example, in the cases of carton, cover top, cover strip and carton label, entries appear only if the customer requires special cartons, specially labelled. In the absence of such entries, the standard cartons are used.